

WHAT IS CLAIMED IS:

1        1. A computer-implemented system for assigning sequence numbers,  
2        *comprising:*  
3            (a) a computer system; and  
4            (b) sequence number assignment logic, performed by the computer system, for  
5        generating a recoverable, unique sequence number for assignment to an application, wherein  
6        the sequence number is contained in a control page stored in a database on a data storage  
7        device coupled to the computer system and shared with other computer systems.

1        2. The system of claim 1, wherein the control page includes one or more  
2        attributes selected from a group of attributes comprising an identifier, the sequence number  
3        (SN), a range value (N), and a starting sequence number (Starting SN).

1        3. The system of claim 2, wherein the identifier is a user-defined value that  
2        identifies a use for the sequence number.

1        4. The system of claim 2, wherein a value stored in N identifies a range of  
2        sequence number assignments.

1        5. The system of claim 1, wherein one or more attributes from the control page  
2        are stored in a data structure that is stored in the computer system.

1           6.     The system of claim 5, wherein the data structure includes one or more  
2     attributes selected from a group of attributes comprising a sequence number (SN\_MEM)  
3     and a "number remaining" value (N\_Rem).

1           7.     The system of claim 6, wherein a value stored in N\_Rem indicates when a  
2     range of sequence numbers should be obtained from the control page.

1           8.     The system of claim 1, wherein the control page is periodically saved to the  
2     data storage device, in order to effect a hardening of the control page.

1           9.     The system of claim 1, wherein the sequence number assignment logic  
2     further comprises logic for latching the sequence number to serialize generation of the  
3     sequence number within the computer system.

1           10.    The system of claim 1, wherein the sequence number assignment logic  
2     further comprises logic for physically locking the control page to serialize updates to the  
3     control page across multiple computer systems.

1           11.    The system of claim 10, wherein the physical lock is not maintained when the  
2     computer system fails, so that other computer systems are not prevented from continuing to  
3     generate new sequence numbers.

1           12. A method of assigning sequence numbers in a computer-implemented  
2       system, comprising:  
3           (a) generating a recoverable, unique sequence number using sequence number  
4       assignment logic performed by a computer system for assignment to an application; and  
5           (b) storing the sequence number in a control page, wherein the control page is stored  
6       in a database on a data storage device coupled to the computer system and shared with other  
7       computer systems.

1           13. The method of claim 12, wherein the control page includes one or more  
2       attributes selected from a group of attributes comprising an identifier, the sequence number  
3       (SN), a range value (N), and a starting sequence number (Starting SN).

1           14. The method of claim 13, wherein the identifier is a user-defined value that  
2       identifies a use for the sequence number.

1           15. The method of claim 13, wherein a value stored in N identifies a range of  
2       sequence number assignments.

1           16. The method of claim 12, wherein one or more attributes from the control  
2       page are stored in a data structure that is stored in the computer system.

1           17. The method of claim 16, wherein the data structure includes one or more

2 attributes selected from a group of attributes comprising a sequence number (SN\_MEM)  
3 and a "number remaining" value (N\_Rem).

1 18. The method of claim 17, wherein a value stored in N\_Rem indicates when a  
2 range of sequence numbers should be obtained from the control page.

1 19. The method of claim 12, wherein the control page is periodically saved to the  
2 data storage device, in order to effect a hardening of the control page.

1 20. The method of claim 12, wherein the sequence number assignment step  
2 further comprises latching the sequence number to serialize generation of the sequence  
3 number within the computer system.

1 21. The method of claim 12, wherein the sequence number assignment step  
2 further comprises physically locking the control page to serialize updates to the control page  
3 across multiple computer systems.

1 22. The method of claim 21, wherein the physical lock is not maintained when  
2 the computer system fails, so that other computer systems are not prevented from  
3 continuing to generate new sequence numbers.

1 23. An article of manufacture embodying logic for performing a method of

2 assigning sequence numbers in a computer-implemented system, the method comprising:  
3 (a) generating a recoverable, unique sequence number using sequence number  
4 assignment logic performed by a computer system for assignment to an application; and  
5 (b) storing the sequence number in a control page, wherein the control page is stored  
6 in a database on a data storage device coupled to the computer system and shared with other  
7 computer systems.

1 24. The article of manufacture of claim 23, wherein the control page includes  
2 one or more attributes selected from a group of attributes comprising an identifier, the  
3 sequence number (SN), a range value (N), and a starting sequence number (Starting SN).

1 25. The article of manufacture of claim 24, wherein the identifier is a user-  
2 defined value that identifies a use for the sequence number.

1 26. The article of manufacture of claim 24, wherein a value stored in N identifies  
2 a range of sequence number assignments.

1 27. The article of manufacture of claim 23, wherein one or more attributes from  
2 the control page are stored in a data structure that is stored in the computer system.

1 28. The article of manufacture of claim 27, wherein the data structure includes  
2 one or more attributes selected from a group of attributes comprising a sequence number

3 (SN\_MEM) and a “number remaining” value (N\_Rem).

1 29. The article of manufacture of claim 28, wherein a value stored in N\_Rem  
2 indicates when a range of sequence numbers should be obtained from the control page.

1 30. The article of manufacture of claim 23, wherein the control page is  
2 periodically saved to the data storage device, in order to effect a hardening of the control  
3 page.

1 31. The article of manufacture of claim 23, wherein the sequence number  
2 assignment step further comprises latching the sequence number to serialize generation of  
3 the sequence number within the computer system.

1 32. The article of manufacture of claim 23, wherein the sequence number  
2 assignment step further comprises physically locking the control page to serialize updates to  
3 the control page across multiple computer systems.

1 33. The article of manufacture of claim 32, wherein the physical lock is not  
2 maintained when the computer system fails, so that other computer systems are not  
3 prevented from continuing to generate new sequence numbers.

1 34. A data structure used by sequence number assignment logic performed by

2 the computer, the data structures comprising:  
3 a control page that contains a sequence number that has no restrictions on its size,  
4 an identifier that is a user-defined value that identifies a use for the sequence number, a  
5 range value (N) that identifies a range of sequence number assignments, and a starting  
6 sequence number (Starting SN) that comprises an initial value for the sequence number.

1 35. The data structure of claim 34, wherein one or more attributes from the  
2 control page are stored in an in-memory data structure in the computer system.

1 36. The data structure of claim 35, wherein the in-memory data structure  
2 includes one or more attributes selected from a group of attributes comprising a sequence  
3 number (SN\_MEM) and a "number remaining" value (N\_Rem).

1 37. The data structure of claim 36, wherein a value stored in N\_Rem indicates  
2 when a range of sequence numbers should be obtained from the control page.

1 38. The data structure of claim 35, wherein the control page is periodically saved  
2 to a data storage device, in order to effect a hardening of the control page.

1 39. The data structure of claim 35, wherein the sequence number is latched to  
2 serialize generation of the sequence number within the computer system.

1           40.    The data structure of claim 35, wherein the control page is physically locked  
2    by a computer system to serialize updates to the control page across multiple computer  
3    systems.

1           41.    The data structure of claim 40, wherein the physical lock is not maintained  
2    when the computer system fails, so that other computer systems are not prevented from  
3    continuing to generate new sequence numbers.

Printed on 01/09/2018 at 10:45 AM by 0000038US1